

Antenna Gain Report for APX N70

REPORT ID: 2022-AG-001

MODEL NO.: APX N70

TESTED DATE: 2022-09-02

ISSUED: 2024-04-22

MANUFACTURER: Motorola Solutions Inc.

ADDRESS : 500 W Monroe Street, Ste 4400. Chicago, IL 60661

ISSUED BY : Motorola Solutions Inc, 2000 Progress Pkwy, Schaumburg, IL 60196

TEST LOCATION : Motorola Solutions, Inc. 2000 Progress Pkwy, Schaumburg, IL 60196

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RELEASE CONTROL RECORD

REPORT ID	REASON FOR CHANGE	DATE ISSUED
2022-AG-001	Original release	2022-09-14
2024-AG-002	Antenna Part Number added under General Information Table #1	2022-04-22

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1 General Information

APPLICANT:	Motorola Solutions, Inc
MANUFACTURER:	Motorola Solutions, Inc
MODEL NO:	APX N70
SERIAL NUMBER:	Serial Number: 022TYP0232
HARDWARE VERSION:	Rev P1
Antenna Part Number:	AN000413A03
SOFTWARE VERSION:	NA
PRODUCT TYPE:	Converged device
BLUETOOTH:	2.4GHz Stamped Metal Antenna
WLAN:	2.4GHz and 5GHz Stamped Metal Antenna
NFC:	13.56MHz Flex Antenna
CONFIGURATION OF PRIMARY MECHANICAL MODE:	Monoblock (example)

The above equipment has been tested by **Motorola Solutions Schaumburg, IL.**

PREPARED BY: Ross Ripley

APPROVED BY: Ross Ripley

2 Test Lab Environment Conditions

Temperature	20°C to 30°C
Humidity	30% to 70%

3 Test Equipment List

Type of Equipment	Model Number	Calibration Due Date
Antenna Chamber	R&S 3 meter	N/A
OTA Test Rack	R&S TS8991	24 Mar 2023
Call Box	R&S CMW500	24 Mar 2023
Vector Network Analyzer	R&S ZNB8	24 Mar 2023
Power Meter	R&S NRX	24 Mar 2023
Switch Control Units	R&S OSP230	24 Mar 2023

4 Test Procedure

Device Under Test mounted on Antenna Chamber turntable as shown in Appendix B. Measurements, including conducted power, TRP, and Peak EIRP and obtained by the TS8991 test system across low, mid and hi portions of the frequency band and across a 360 degree sphere. Peak antenna gain is determined from the maximum EIRP measured across the sphere with respect to the conducted power.

5 Evaluation Summary

5.1 2.4GHz Antenna Gains (Bluetooth and WLAN)

WLAN 2.4GHz 802.11b 1Mbps

Wifi 2.4GHz Channel	CH1	CH6	CH11	Unit
Frequency	2412	2437	2462	MHz
Peak Antenna Gain	0.1	0.2	0.4	dBi

Bluetooth BT 1M GFSK 1Mbps

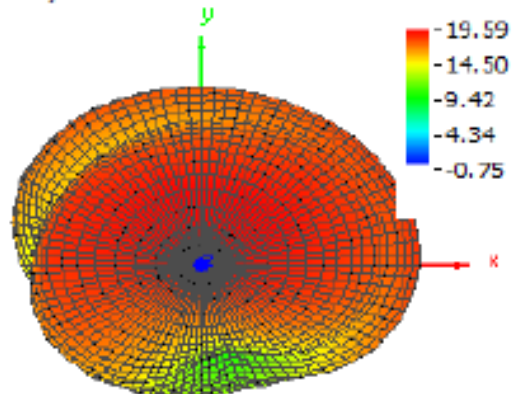
Bluetooth Channel	CH 37	CH 16	CH 39	Unit
Frequency	2402	2438	2480	MHz
Peak Antenna Gain	0.6	0.6	1.1	dBi

Bluetooth BLE 1M GFSK 1Mbps

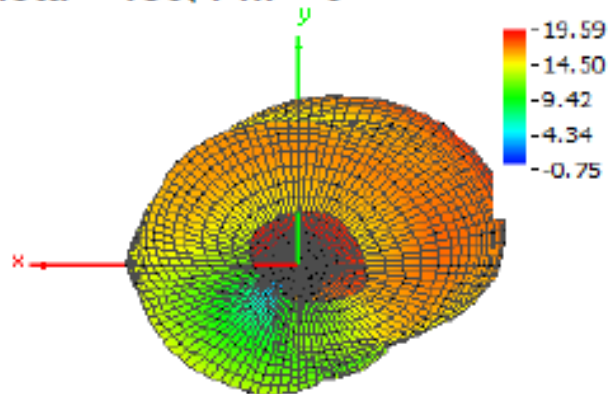
Bluetooth Channel	CH 37	CH 16	CH 39	Unit
Frequency	2402	2438	2480	MHz
Peak Antenna Gain	0.6	0.6	1.1	dBi

5.2 WLAN 2.4GHz 802.11b 1Mbps antenna 3D patterns

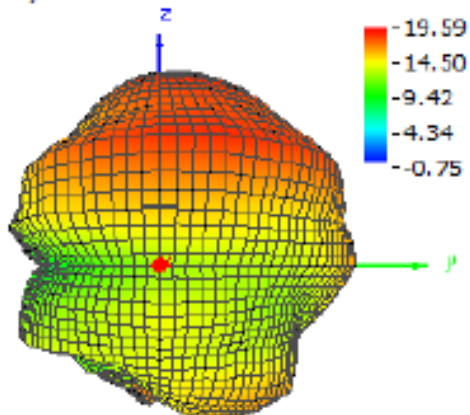
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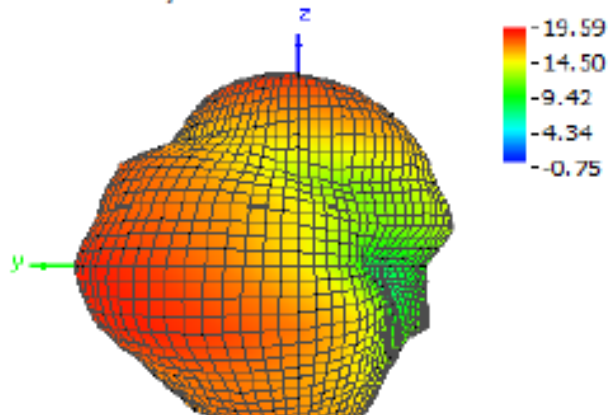
Theta = 180, Phi = 0



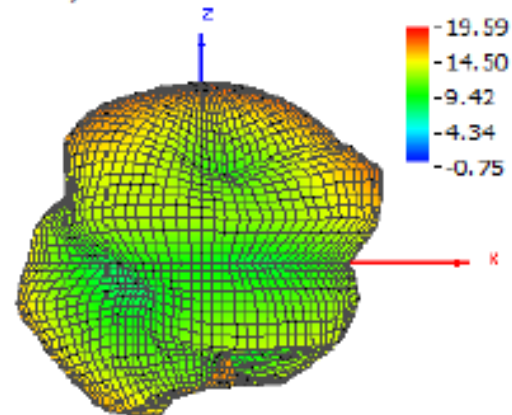
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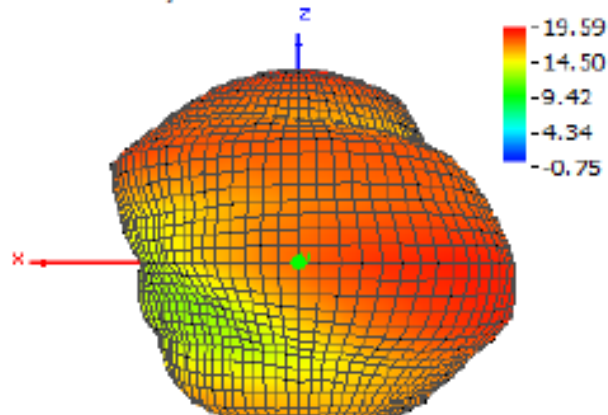
Theta = 90, Phi = 180



Theta = 90, Phi = 270



Theta = 90, Phi = 90

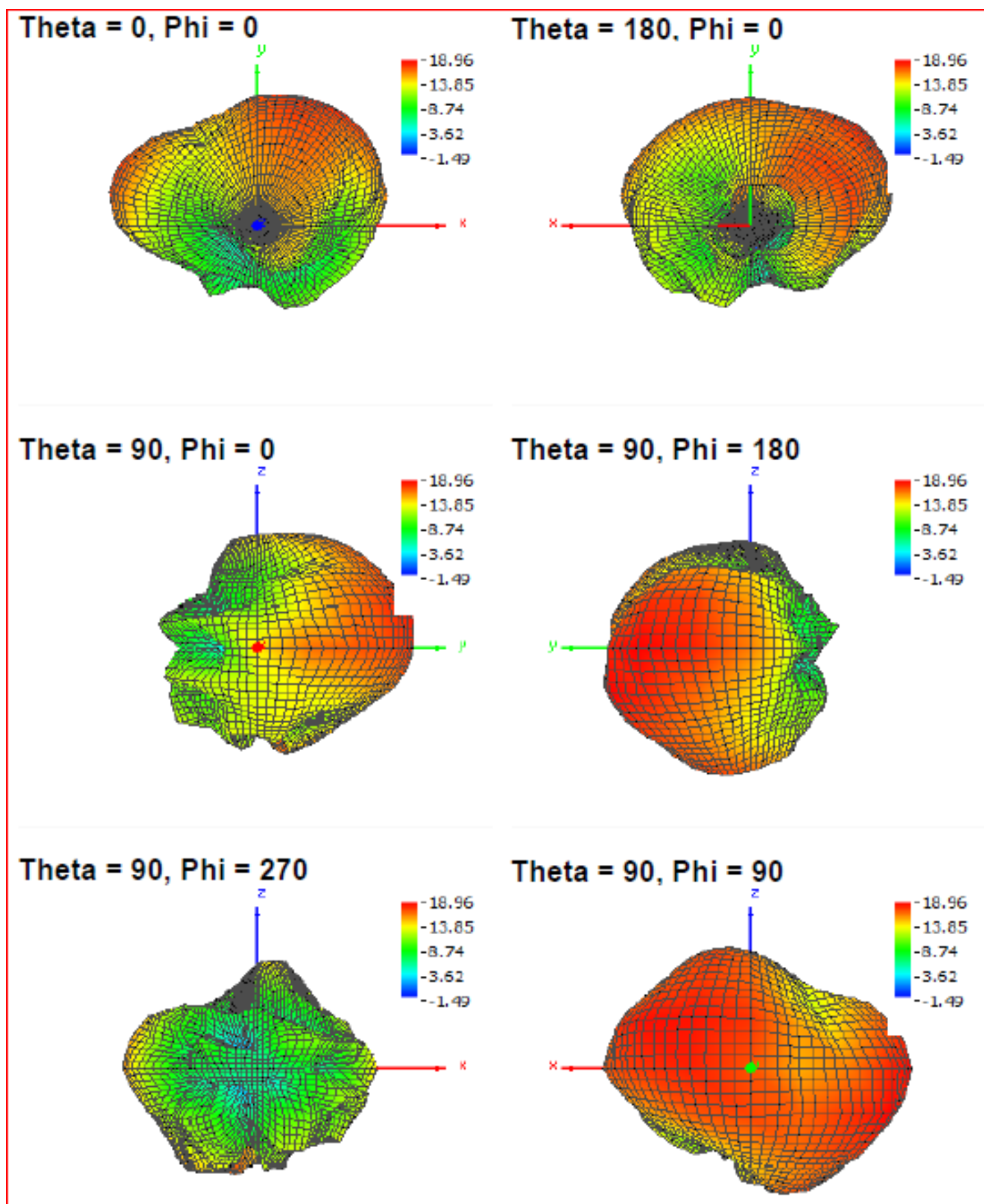


5.3 5GHz Antenna Gains (WLAN)

5.3.1 WLAN 5GHz802.11a 6Mbps

Wifi 5GHz Channel	CH36	CH100	CH165	Unit
Frequency	5180	5500	5825	MHz
Peak Antenna Gain	4.6	3.3	3.1	dBi

5.4 WLAN 5GHz802.11a 6Mbps antenna 3D patterns



6 APPENDIX A. EUT Photographs

